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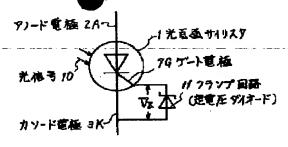
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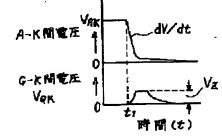
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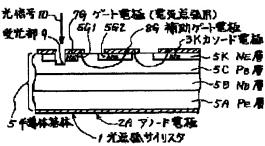
TITLE

OVERVOLTAGE PROTECTING DEVICE

FOR OPTICAL IGNITION THYRISTOR







ABSTRACT :

PURPOSE: To reduce an overvoltage while suppressing a decrease in dynamic characteristics and to improve reliability by providing a clamp circuit for suppressing an overvoltage generated at the time of an optical ignition between a gate electrode and a cathode electrode to a predetermined clamp voltage.

CONSTITUTION: When a receiver of an optical ignition thyristor 1 is irradiated with a light signal 10 to be optically ignited, an overvoltage VGK is generated between G and K as a voltage VAK between A and K is lowered at a falling rate dV/dt, and applied to a Zener diode 11. The diode 11 becomes conductive during a period in which it exceeds its Zener breakdown voltage VZ to suppress the overvoltage VGK to the voltage VZ. Accordingly, if the voltage VZ is set to a range which does not exceed a gate allowable loss allowed between the G and the K at this time, a PB layer 5C disposed between a gate electrode 7G and an auxiliary gate electrode 8G is protected against a damage due to the overvoltage and a thermal breakdown due to a gate loss. Thus, dynamic characteristics such as optical ignition sensitivity, dV/dt characteristic, etc., can be stabilized.

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